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STUDY PROJECT

ARMY PROGRAM MANAGEMENT SYSTEM INTEGRATION:
STRUCTURING FOR PRODUCTIVITY

BY

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toward effective system integration. Success will determine the degree of productivity within the PEO/PM office. The structural, cultural, and process changes that have been made since the PEO/PM system was implemented are resulting in fewer problems in the PM environment. Organizational structure using the matrix management concept is a key component to the PEO/PM's ability to accomplish the mission. Overall, the matrix concept, which utilizes functional management personnel from the AMC commodity command to help accomplish the PEO/PM mission, is working well interspersed by spikes of problem areas. The PEO/PM system has evolved into a workable approach to acquisition management since its inception a little more than two years ago. The key to successful matrix management is a cohesive program office with close ties to the PM and to the user. Through responsible managers and employees, teamwork can overcome the drawbacks of the matrix form. Continued evolution will insure that the spirit of acquisition reform in the Army is fulfilled.

USAWC MILITARY STUDIES PROGRAM PAPER

ARMY PROGRAM MANAGEMENT SYSTEM INTEGRATION: STRUCTURING FOR PRODUCTIVITY

An Individual Study Project
Intended for Publication

by

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Carlisle Barracks, Pennsylvania 17013
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ABSTRACT

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Overall materiel acquisition management philosophy in the U.S. Army is one of a partnership of responsibility between the Program Executive Officer/Program Manager (PEO/PM) and the supporting elements of the materiel developer, most notably the Army Materiel Command (AMC). However, the PEO/PM reports to the Civilian Army Acquisition Executive and the Army Materiel Command reports to the Army Chief of Staff. The PEO/PM has responsibility toward effective system integration. Success will determine the degree of productivity within the PEO/PM office. The structural, cultural, and process changes that have been made since the PEO/PM system was implemented are resulting in fewer problems in the PM environment. Organizational structure using the matrix management concept is a key component to the PEO/PM's ability to accomplish the mission. Overall, the matrix concept, which utilizes functional management personnel from the AMC commodity command to help accomplish the PEO/PM mission, is working well interspersed by spikes of problem areas. The PEO/PM system has evolved into a workable approach to acquisition management since its inception a little more than two years ago. The key to successful matrix management is a cohesive program office with close ties to the PM and to the user. Through responsible managers and employees, teamwork can overcome the drawbacks of the matrix form. Continued evolution will insure that the spirit of acquisition reform in the Army is fulfilled.

INTRODUCTION

In June 1986, the President's Blue Ribbon Commission on Defense Management, chaired by David Packard, prescribed a variety of actions required to break down the barriers to productivity and promote the use of innovative and cost-effective acquisition strategies. The implementation of the Army's Program Executive Officer Management System in May 1987 was consistent with the Commission's recommendations to incorporate business management methods into DOD's materiel acquisition management process. This system is intended to focus both program management authority and program management responsibility on the Program Executive Officer (PEO) and Program Manager (PM) as they accomplish the difficult task of acquiring the Army's weapon systems.

The focus of materiel acquisition management in the Army is to produce military units that are adequately trained, equipped, and maintained to execute the tactical mission. Consistent with this user focus, overall materiel acquisition management philosophy should be one of a partnership of responsibility between the PEO/PM and the supporting elements of the the Army's materiel developer, the Army Materiel Command. However, under the new rules, there are two reporting chains that encompass the

acquisition process. The PEO reports to the civilian Army Acquisition Executive (AAE), and the Army Materiel Command (AMC) reports to the Army Chief of Staff. The organizational structure of the PEO/PM offices requires that functional support from AMC and the Major Subordinate Commands (MSC) of AMC be derived to perform the PM mission. Support to the PEO and PM are provided by both MSC functional service offices and by matrixing assignment to MSC functional staff experts. The PM is responsible for effective system integration to gain maximum efficient productivity. This study will attempt to determine how the PEO and PM ensures the accomplishment of his mission through a combination of his vested authority and the use of functional personnel provided by the Army Materiel Command.

BACKGROUND

Department of Defense acquisition procedures have been criticized as being too complex, lengthy, and costly. These problems, that are manifested in the office of any PM, can be attributed historically and traditionally to the structure, process, and culture that has been allowed to evolve and exist within the Army's acquisition community. The structure encompasses the combination of applicable laws, regulation, and the organization provided to accomplish the research, development, and acquisition (RDA) function. The way in which

that structure interacts to produce a weapon system is the process. Culture is the cumulative sum of past practices, both good and bad, and their impact on interpretation of guidance and attitude toward institutional changes to the system.[1] The "fog of battle" of acquisition procedures was well represented in terms of structure, process, and culture when the PEO/PM system was implemented more than two years ago. Fortunately, the fog has slowly lifted over time. The growing pains are less severe which is providing the PM with increased optimism toward his ability to integrate the program and organizational systems to accomplish the mission.

STRUCTURAL CHANGES

In the most recent years, the PM has witnessed considerable change in the structure of the Army's acquisition business, specifically in law, regulations, directives, and organization.

The evolving process of acquisition improvements has been an uphill battle. Since the early 1960's, many studies analyzing the defense weapons acquisition process have noted its strengths, its deficiencies, and its needed reforms. From 1960 to 1987 there were twelve major studies, not including those of the General Accounting Office.[2] The findings of each were generally similar, but problems of cost growth and long acquisition cycles continued.

In 1985, following numerous accounts presented by the media of waste, fraud, and abuse in the procurement practices of the Services, the President established the Blue Ribbon Commission on Defense Management, commonly referred to as the Packard Commission. The Commission investigated DOD management policies and procedures such as the budget process, legislative oversight, and the defense acquisition system.

In June 1986, the Packard Commission presented 55 strong recommendations to the President. Seventeen of the recommendations were aimed at streamlining the procurement process through organizational changes, most notably the PEO/PM management system, and a corresponding reduction of acquisition personnel.[3] Incorporation of effective management is a key element to this process. These recommendations were welcomed with the same spirit that was afforded the investigation. It was recognized that not only were there problems within the system, but the grand crusade must now begin to offer solutions outside the engrained culture.

Emphasis should be made that the Packard Commission recommended the Services to emulate successful program management features found in commercial enterprizes. Among these are clear command channels, program baseline stability, limitations on reporting, small high quality staffs, continuous communications with the user customer, and prototype testing.[4] A mindset toward business rather than tradition was needed.

Traditionally, the Army has organized its RDA efforts along the familiar lines of organization which works well in an

operational or tactical environment. Soldiers and leaders need to move cautiously through the battlefield by knowing who is on the left and right flanks at all times. In the RDA business, however, strong functional staff agencies practicing rigidly defined procedures have tended to overcontrol the acquisition process resulting in slow program progress and diffused responsibility for program success or failure. The Commission did well in recognizing the PM's plight in this regard.

The Packard Commission recommendations were implemented by the President through National Security Decision Directive (NSDD) 219, a document which also directed each Service to appoint a full-time Service Acquisition Executive (SAE) to strive for stable and tangible objectives in the Service acquisition arena.[5] It also directed the appointment of Program Executive Officers to manage a defined number of programs and that Program Managers report on program matters directly to a PEO or the SAE (AAE in the case of the Army). Management layering that inherently causes lengthy administrative delays would thus be eliminated by insuring that there was no more than one level of program supervision between an Army PM and the AAE. Two layers would be the maximum between the PM and the Defense Acquisition Executive (DAE) at DOD level. This break from culture established a programmatic reporting chain for the PM to report cost, schedule, and performance issues similiar to that practiced in business. The PM looked to the AAE as his Group Vice-President within the Army business corporation.

The report from the Packard Commission was a major

consideration on the road to formal legislation. After careful deliberations and conferences in both the Senate and the House, the Goldwater-Nichols Department of Defense Reorganization Act of 1986, or Public Law 99-433, was passed on 1 October 1986. A major thrust of Title V of the Reorganization Act was the integration of staffs in a number of areas and the elimination of staff duplication. Effective matrix management would be required to facilitate this re-structuring in the acquisition arena.

The Act stated that the sole responsibility for acquisition and R&D shall rest with the Office of the Service Secretary. Subsequently, to accommodate this provision, a reorganization of the Army Staff and the Secretariat took place. Concurrently, the Act also called for a reduction of the total number of military and civilians, the number of officers, and the number of General Officers assigned or detailed to permanent duty to the Office of the Secretary of the Army. The end result was a reduction of the Army Staff by about 15%.

Other legislation in the form of the FY 1987 Authorization Act created the Under Secretary of Defense for Acquisition (USD(A)) as the Defense Acquisition Executive (DAE). In keeping with further implementation of accepted business practices, the DAE is tantamount to the Chief Executive Officer of the entire defense acquisition corporation.

Below the Chief Executive and Group Vice President levels, program managers saw the Army restructure its research, development and acquisition (RDA) organization by combining the assets of DCSRDA (Deputy Chief of Staff for Research,

Development, and Acquisition) on the Army staff and ASA(RDA) (Assistant Secretary of the Army for Research, Development, and Acquisition) to form a newly structured office of ASA(RDA) in the Secretariat to perform all RDA functions in the ARMY Headquarters. The traditional Department of the Army System Coordinator (DASC), the dependable link between the PM and the heirarchy, disappeared. Under the new management system, theoretically, the DASC would not be missed. The ASA(RDA) was given the responsibility for implementing the newly prescribed Program Executive Officer/Program Manager (PEO/PM) System for management of acquisition programs. The Army staff element, DCSRDA, was eliminated. The restructured ASA(RDA) established a three-star military deputy. No other office in the Army Staff was given R&D responsibilities. Under this organizational scheme, the ASA(RDA) also assumed contracting and procurement functions formerly performed in the Office of the DCSLOG and the Army staff.

The Army has now implemented the Army Acquisition Executive and the PEO/PM system of management for Army materiel acquisition programs in accordance with the provisions of the Reorganization Act, NSDD 219, and DOD Directives. This was laid out in the Under Secretary of the Army Memorandum of April 29, 1987, and took effect on May 1, 1987.

Under the new system of management, the AAE reports to the DAE on program matters. Major Program Managers report directly to a Program Executive Officer, who in turn reports to the Army Acquisition Executive. The acquisition organization in DA

consists only of the AAE and the ASA(RDA). The PM accomplishes his mission by exercising responsibility and authority through a core of assigned personnel and through the matrix organization established by the materiel developer.

THE PROGRAM MANAGER AUTHORITY SCENARIO

Program managers, the majority of the time, will be consistent when asked to explain their responsibilities and accountability as a PM. There is usually little question in this area. There is, however, a divergence of opinion when asked about his realm of authority. Some PMs emphasize that they have complete authority. Others passionately plead for the management layers to refrain from tickling their program so that they can exercise management authority and responsibilities more effectively. This type of constraint is more difficult to measure than it is to be felt. However, the negative impact of non-effective matrix management is felt in the PM office structure depending on a PM's ability to exercise his vested authority.

Constraints in the PM environment are applicable to resource availability such as money, time, and people as well as cost, schedule, and performance requirements. Despite these existing constraints of performance, the PM's permission to perform and the statement of his authority is embodied in the PM Charter. The charter, issued by the PEO, is the contract of expected

performance between the PM and the PEO. Upon inclusion of signatures on the charter the PM becomes responsible for performing all tasks and milestones and for the quality of performance and productivity.[6] Obviously, the charter, while legalizing the PM's acquisition environment, is only a small part of the PM authority scenario.

The substantial part of the authority scenario is dependent on the PM's individual ability to perform the tasks. His previous assignments, educational preparation, as well as his personality, character, and leadership traits establish the PM's credibility to those above him and to those who work for him.

The PM's personal ability to solve the problems outside his environment is the sustaining aspect of his authority. The PM's tasks are accomplished through the people that are assigned to work in the program office. It is through the synergistic efforts of the entire team that the PM's authority is manifested. Through people, the PM provides an interpretation of his permission to perform by insuring everyone understands the mission at hand. He continually exercises an assessment of the probability of his success at each task or milestone. The people prioritize their efforts based on their judgement of the PM's leadership and his exercise of authority.

Leadership can not be overestimated as a core element to task performance and productivity. The PM's ability to guide or influence the actions of others, to include those outside his direct control, in such a way as to gain their willing cooperation is key to his task accomplishment. The starting point is people.

People constraints is the area where the PM is significantly challenged. To understand how a PM accomplishes his mission in a matrix management environment one must understand the important relationship between leadership ability and its direct link to influencing people within the organization.

SYSTEM INTEGRATION

The PM exercises management skills necessary for planning, organizing, directing, and controlling his particular Army weapon system acquisition program. Through leadership and authority the PM must develop into a master of systems integration. The PM's vision to accomplish the mission is encompassed in a two-part formula. The first centers around program management which focuses on weapon system effectiveness. The second is those actions of organizational management which focus on human systems. This includes the matrix management concept of task accomplishment.[7]

The goal of program management activities is a successful program. It is product oriented. The PM is responsible for conducting the day-to-day planning and management of the program consistent with, and supportive of, the policies and procedures issued by the AAE and contained in appropriate regulations, policies, procedures, and standards.[8] To have a successful program, the PM must plan for and manage risk and uncertainty.

Programmatically, this is the PM's greatest challenge to mission accomplishment.

To achieve program balance and control, the entire PM team must be aware that acquiring the required weapon system must be discussed in terms of when it is needed and how much the customer is willing to pay for it. Changes in one or the other will affect baseline stability of the program; the perfect target for scrutiny by the Congress and other agencies in the heirarchy. This challenge validates the programmatic reporting chain to the AAE that has been incorporated into the PEO/PM management system for cost, schedule, and performance. Successful program systems integration here complements success in fulfilling organizational management responsibilities.

Organizational management is process or resource oriented. The goal of organizational excellence is achieved through organizational systems integration of human systems.[9] They can be personal, interpersonal, or administrative in nature. The focus is on the PM/matrix team efficiency.

The PM must be the master systems integrator by molding an efficient and effective team in the PM office to achieve successful program management. Organizational management is in support of program management. It is not an independent function. Flaws in the PM/matrix organization will have a direct impact on the program's overall success.

ORGANIZATIONAL MANAGEMENT RESPONSIBILITIES

The PM accomplishes his mission through matrix management support only if supporting agencies fulfill their applicable responsibilities toward organizational management. Essential to achieving this end are the inter-relationships between the PM office, the PEO office, and the AAE on programmatic reporting and the PM and AMC on the functional reporting side. Functional integration is accomplished through the functional experts assigned from the materiel developer to the PM's matrix organization.

The basis for good planning throughout all these organizations is the acquisition strategy that has been approved for each system program. The acquisition strategy is a comprehensive plan that describes how to achieve program goals and objectives.[10] It is a road map for direction and control of the program by providing cohesion of business, technical, and risk management objectives. The strategy is developed by the PM and approved through program management channels.

Consideration of organizational management goals and manpower requirements is imperative when formulating the strategy. The relatively small cadre of personnel required during a program's exploration/definition phase evolves into a more complex organization as the program's life cycle matures to concept demonstration/validation, full-scale development, and finally toward production and operations support. Uncertainty becomes

greater and task accomplishment becomes more involved. The PM must continually reevaluate his manpower requirements in order to negotiate the makeup of his matrix organization with the MSC.

The PM is required to develop and submit financial, manpower, and matrix support requirements to his respective PEO and to the supporting major subordinate command headquarters (MSC). The PEO, as the extension of the AAE's management oversight of acquisition programs, has several responsibilities that contribute to the PM's organizational management success.

First, the PEO is responsible to ensure that his assigned PMs are adequately resourced and that requirements are documented to justify requests for resources (financial, manpower, and facilities) in order to execute the assigned programs.[11] Secondly, the PEO is the bridge from the programmatic side to the functional side, on behalf of the PM, by ensuring that functional matrixed support is planned and coordinated by supporting organizations and subordinate PMs. The bridge is made stronger by the PEO ensuring that subordinate PMs maintain an information flow with the materiel developer who provides the matrix support to the PM. The PM's success in providing current and accurate program status ensures timely and adequate functional matrix support.

The ASA(RDA), serving to assist the AAE in ensuring Army compliance with overall policies, provides another bridge to the entire Army acquisition community. He has the responsibility to develop and issue all tasks and directions to PEOs, materiel developers, and DA staff agencies to execute the AAE's decision to

establish or terminate PM offices. Execution of this responsibility is the catalyst to formulating the manpower and matrix management structure at the appropriate levels.

The PEO Management System differentiates between programmatic issues that control the cost, schedule or performance of the program from the functional issues that are subject to legal, directive or regulatory provisions. AMC is responsible to the AAE for functional compliance and consistency of acquisition programs. AMC provides this necessary functional oversight while providing necessary competent functional support to the PM/PEO offices. Both reporting chains are responsible to the AAE for system integration. The AAE will not accept uncoordinated positions from either chain. Therefore, the relationship between the PM/PEO, AMC and the AAE must be continuous, close, and parallel. HQ, AMC and the MSCs do not impose layering on the programmatic chain while the PEO/PM does not ignore the functional standards required.

THE PROGRAM MANAGEMENT ORGANIZATION

In the quest for excellence, DOD's approach to Defense Acquisition, every PM desires to manage a high performance organization. There are several aspects of a high performance organization that should be reviewed to gain a better perspective on the matrix management concept that is employed in the PM

office.[12]

Within a high performance organization, there must be a bias for action.[13] To allow paralysis of analysis to creep in, thereby stifling the PM's synergistic approach to problem-solving, will make a program unsuccessful. The whole team must take action toward the milestones of the PM office. The programmatic reporting chain accommodates this measure of success by removing the burden of heirarchal layering from the PM.

The PM office must be close to the customer that has the requirement for the weapon system. Personnel assigned to the PM office and the matrix organization must be tuned in to the requirements and positions of the user. User orientation also provides mission perspective to the PM's vision and focus.

Autonomy and entrepreneurship apply to the leadership required throughout the PM office and the willingness of the PM team to provide innovative solutions to problems.[14] Productivity is the result. The PM must be able to achieve productivity through his people by insuring proper treatment of the rank and file within the matrix organization. People at the grass roots level of the organization must be responsive to the importance of productivity and quality. This is especially true if the PM is able to instill the philosophical values into the matrix organization that are important to the success of the program. Full backing of the matrix by both the PM office and the MSC will ensure effectiveness in this area.

The matrix organization must be allowed to work by being built on and maintained at the required level of expertise.

Personnel assigned must be experts in their functional areas, whether it be engineering, logistics, contracting, quality assurance, or business. Selective appointment to the organization is critical. Program management criteria must be known by all. Once assigned, personnel turnover should be avoided to prevent re-inventing the wheel as progress toward milestones, philosophy of the organization, values, productivity, and overall mission accomplishment is achieved.

A goal of the PEO/PM Management System was simplicity of organization through simple reporting chains and lean staffs as found in successful commercial businesses. The PM's ability to accomplish his mission through matrix management support by the MSC depends on his ability to achieve an effective organization with the people assigned.

MATRIX MANAGEMENT

Two of the characteristics of a high performance organization stand out among all others. Productivity through people and a lean staff that uses simple form are important. The staff found in successful PM offices views itself as an extended family. This is a direct result of the PM's efforts to mold his team into a cohesive entity. Through informal face to face communications, the PM keeps feedback channels open while emphasizing mission accomplishment, expectations of the worker, and

whenever possible, celebrating the success of the program.

The small lean staff and the matrix organization accomplishes productivity. The degree of productivity depends upon the perception of where the priorities lie. The small staff, such as those assigned directly to the core of a PM office, sees and understands the priorities very clearly because their loyalty is to the familial organization and to the PM. Personnel provided to the PM in the form of direct matrix support may or may not develop a sense of the true priorities depending on which functional directorate they came from, the length of time they will be assigned to the PM office, and the degree of expertise they bring with them. Personnel assigned to indirect matrix support, on the other hand, face conflicting priorities on a day to day basis. There is work to be done for the PM office, but there are other PM offices and other functional directorates that are competing for the same amount of allocable time.

Faced with a defined amount of total resources applied against a complex weapon system acquisition structure, the PM must accept the matrix management system as a plausible solution to a resource constraint environment. Matrix program management is an attempt to obtain maximum technology and performance in a cost-effective manner and within time and schedule constraints.[15] A real problem erupts when the priorities of the PM become diluted within the matrix. Mission accomplishment becomes partially paralyzed and is dependent on how the personnel within the matrix perceive the effectiveness of their two bosses, the PM and the head of the functional directorate.

Theoretically, PMs do have a certain degree of direct authority over project personnel who are loaned or matrixed to their project teams from the various functional disciplines by functional supervisors. The PM exercises operational control of the project team members and directs their work effort in support of the project. However, line authority is retained by the functional supervisor.

The PM must build and motivate the borrowed functional specialists into a dedicated project team if system development efforts within cost and schedule constraints are to be achieved. The PM must also provide job performance goals, work challenge, recognition, supervisor to employee communication, and management or supervision to team members. Interaction between core and matrix project personnel must be a priority. All project personnnel must perceive the PM as being at least as effective as the functional supervisors in applying key management and motivation factors in order to elicit dedicated support.[16]

ARMY PROGRAM MANAGEMENT THROUGH MATRIX SUPPORT

In accordance with the PM's responsibility to develop and submit financial, manpower, and matrix support requirements to the respective PEO, the PM and the chief of each functional directorate at the MSC negotiate a Memorandum of Agreement (MOA) that specifies the support to be provided for the fiscal year.

This singular document is the crux to the PM's mission accomplishment.

The MOA includes the means by which the functional directorate will meet program functional requirements. It also delineates the operating relationships to be made by mutual agreement or negotiations between both organizations. Responsibility will be given to an individual, normally an assistant PM, to serve as the primary coordinator. He will review and monitor the MOA to measure performance against commitment and determine intermediate changes that may be necessary.

Internal to the MSC, regulations have been developed that govern and form the basis for MOA development. Normally, these regulations are specific in addressing organizations, mission, and functions of the MSC, and criteria for effective matrix management.

The functional directorate will provide a specified number of collocated personnel to the PM office. This will include personnel assigned to overseas offices of the PM. The job title, series, and grade of collocated functional support personnel are clearly delineated.

Functional support other than collocated, identified as indirect matrix support, is also negotiated and specified in the MOA. Existing regulations at the MSC govern this effort, but the PM identifies the requirements. The PM will provide the necessary guidance at program level, and the functional directorate will execute the required tasks within established procedures, regulations, and functional responsibilities. The level of

effort to be provided will be estimated in manyears. Estimates are determined by figures from budget program resourcing reviews held at the MSC and by study conducted by elements of the directorate using requirements submitted by the PM. The manyears of effort will be sub-divided between in-house performance and contract performance.

The PM is required to provide quarterly updates to the MOA. Based on this input, procedures for handling unexpected workload changes, surges, and non-standard information requests are negotiated. In the event that in-house resources are not available, the directorate is required to obtain contract support to satisfy the PM's requirements. The responsibility lies with the directorate to coordinate with the PM procurement management office to prepare tasks/delivery orders as required and submission to the contracting officer for contract action.

The PM has the responsibility to program and budget for manpower and financial requirements for core and direct matrix personnel. Transfer of these type funds to the appropriate directorate are handled through normal funded procurement work directives, subject to the availability of funds. Funding in this regard is managed with care in that each task to be performed under the MOA must be identified as an approved cost element. Costs incurred are recorded only against approved tasks. New tasks originated during the performance period of the MOA are coordinated between the PM and the directorate. Changes to existing tasks, provided it is within the scope and dollar resources of the MOA, are then implemented.

Special categories of funds may be owned by the PM but require transfer to the directorate for expenditure. An example is field support maintenance engineering services. In this case, the MOA will stipulate procedures for transfer through the Resource Management Directorate for expenditure.

The functional directorate must provide monthly performance and cost reports for PM funded tasks. The cost report will contain separate identities for each task and the total value of the MOA. Adjustments are then made to the MOA.

The PM is required to conduct performance evaluation of the personnel provided through MSC functional support by applying rating criteria. The rating will take place at specified times throughout the year. The directorate will be given notification in writing in the form of a letter report of the performance evaluation and the basis therof within a specified number of days after the end of the evaluation period. The letter report normally is signed at the PM/DPM level.

Provisions are provided in the MOA for the PM to present incentive awards for collocated functional support personnel and to provide recommendations for individual training needs.

The operational relationship between the PM and each functional directorate is delineated in local MSC regulations and in accordance with the provisions of the MOA The MOA normally stipulates that the PM is responsible to the PEO and the AAE for programmatics of all aspects of material acquisition, cost, scheduling, and performance of a system. It will further state that the directorate is responsible to the CG of the MSC and CG,

AMC for development of appropriate functional standards and for the competence and availability of functional support for all aspects of the PM managed weapon system in performance of functional tasks. It will delineate that the PM will ensure accomplishment of his mission through the use of functional support personnel while stating that the director and office chiefs will ensure proposed actions are proper, within regulation, and are accomplished to meet stated objectives.

The MOA is a tangible commitment to PM mission accomplishment. It is formal recognition of a functional directorate's responsibilities to the PM and interprets the matrix organization relationship to those responsibilities.

THE PRESENT

The present environment, in the majority of PM offices, is positive with respect to the PEO/PM system and to the implementation of the matrix concept of management. Matrix management works and few problems occur as a result.[17]

A part of this success stems from the commitment declared by the general officer leadership at the MSC level. MSC commanders share a close kinship with the program management arena. Normally, their professional development included assignments in acquisition, some having been a successful PM themselves. They have experienced the hard knocks of a very tough business.

Fortuneately, todays PMs are being partially shielded through the PEO/PM system. Common to all, however, are the horror stories of excessive layering within the heirarchy, extensive briefings at all levels, and the effort that must be expended to effectively implement the matrix management concept. Through their own experiences, the MSC leadership is committed to making the PEO/PM system work. The matrix management sub-system is an integral part of the total resource package afforded these commanders that can, in turn, be provided to the PM. Therefore, the challenge has been presented to the functional directorates within their command to make the system work and to provide the dedicated support to the PMs to accomplish the mission.

PMs are having little difficulty keeping the programmatic decisions in the PEO/PM chain. The PM has also recognized his responsibility to keep the MSC staff informed and apprised of the programs, goals, and other issues associated with each weapon system. The degree of support provided by the directorates by way of indirect matrix support receives high marks in the more technically oriented directorates such as procurement, legal, and the laboratories. The consensus, generally, is that without such support in these three areas, programs could not be executed, no matter how much programmatic authority was given to the PEO/PM system.[18]

The relationship between the PM and HQ, AMC has changed considerably. An important service that AMC does provide is the organizational framework within which the particular MSC must work and reside.[19] The line from AMC to the Army Chief of

Staff versus the line from the PEO/PM to the AAE is not an issue that is causing problems. The Chief of Staff defers to the AAE and ASA(RDA) for running most of what AMC does in the development business. This re-emphasizes the statement made previously that both the programmatic and functional reporting chains ultimately report to the AAE.

Most PMs would like to have total control of all their functional support personnel, both the indirect and direct matrix support as well as the core assigned personnel. For example, in a PM office of 90 personnel perhaps only 35 are core personnel, i.e. assigned to the PM office by TDA (Table of Distribution and Allowances). The other 55 are controlled by the supervisory personnel located in the functional organizations. The conflict is one of priorities. The functional organization supervisor may establish priorities for work that do not necessarily coincide with the priorities that the PM has established for his PM office. As a result, responsiveness by matrix personnel is sometimes less than desired.

Another problem is the fact that as vacancies occur in the matrix organization, it is becoming increasingly more difficult to obtain, in a timely manner, a person that is well qualified to perform duties in a PM office environment. The functional organizations may select the personnel to fill vacancies in the matrix organization and solicit little or no input from the PM or from the core personnel prior to making a selection. PMs consider this a real problem area that has significantly impacted on the quality and responsiveness of the support the PM office

can provide particularly in the areas of product assurance, reliability, and maintainability.[20] There is a need for consistency in implementing, practicing, and maintaining the matrix concept. A proven fact is that where the PM is given the opportunity to have input on performance appraisals and vacancy selection, the organizational effectiveness and the relationship with the functional directorate is greatly improved.

Finally, matrix management has had a direct impact on PM mission accomplishment where personalities involved are accommodating and aware of the system that worked before implementation of the PM/PEO system. The Deputy PM especially must be aware of the importance of his mission role of providing guidance to the people assigned to the matrix. His professional development to fill the role of Deputy PM (DPM) is also critical. Under the previous system people were cross-trained by rotation through the directorates and through the PM office. Under the matrix management concept, many DPMs feel the division of functions will be more distinct and rotation of people between functional directorates will be more limited. In the future, difficulty may be realized finding people with the broad-based experience so desirable in a Deputy PM. If credibility is gained immediately for the new Army Acquisition Corps which establishes career routes for both military and civilian program management personnel, this problem will be less acute. Increasing productivity of the professional workforce, at all levels, is the key to achieving substantial increases in productivity in Army systems acquisition.[21]

CONCLUSION

The structural, cultural, and process changes that have evolved since the PEO/PM system was implemented are resulting in fewer problems in the PM environment. Through a positive approach to streamlining the acquisition process, the PM, in concert with the functional managers of the AMC community, can affect mission accomplishment through the integration of matrix management.

It cannot be said that matrix management is without disadvantages. Rather, in today's Army acquisition environment, concentration has been placed on the advantages of matrix management. Matrix structure reduces numbers and costs of acquisition personnel. It also forces people together who would not normally work together. Finally, through the MOA tool, the matrix concept breaks down functional distinctions and barriers.

The key to successful matrix management is a cohesive program office with close ties to the PM and to the user. Through responsible managers and employees, teamwork can overcome the drawbacks of the matrix form. Effective leadership provided by the PM builds professional teams and promotes initiative in subordinates.

In November 1989, the General Accounting Office responded with a report to Senator William V. Roth's inquiry into Service achievements to streamline the acquisition system.[22] The Army has been more successful than the other Services in ten of fourteen areas associated with implementing the PEO/PM system of program management. Management of resources by PEOs dedicated to assigned programs, PM control of resources dedicated to their programs, and PM appraisal of the performance of program staff members are three areas that require dedicated attention in the future.

At the heart of these shortcomings is further refinement of the matrix approach to program management. The provision of functional expert personnel from the AMC community provides an inviting nuisance opportunity for the MSC to retain some degree of ownership in programs. Superficially, this should not be a problem as long as AMC continues to control facilities and personnel. However, where there is a grey area between programmatic and functional interests there is a tendency for the MSC to become directly involved in the management of the program to the extent that bureaucratic layering and excessive informational briefing requirements may again be experienced by the PM. Further institutionalization of the matrix system is required to prevent erosion of the three-tier programmatic reporting chain and erosion of a PM's authority.

Keeping the functional chain apprised of program status will continue to be a necessity for the allocation of resources. Information flow, both timely and accurate, is key to a program's positive direction. With present day computer and telecommunications technology, the language of the information input should be common and useable at the DOD level down through the programmatic chain and simultaneously through the functional chain to the matrix support element. This would insure the most up to date status for reallocation of resources while eliminating the temptation to require PM information briefings.

The last recommendation is purely a personnel management issue. It is doubtful that PMs can overcome any perceived authority gap and form a viable program team if they do not effectively communicate with and provide leadership to their personnel.[23] Although the organizational structure supports the program management structure, PM interaction with program personnel is the one ingredient that can affect positive program performance. This area must receive quality attention at executive management courses especially at the Defense Systems Management College.

Present perceptions of the Army acquisition process by senior acquisition personnel will lead to innovations for positive adjustment. Increased productivity through refinement and integration of organizational and program management is the goal of the Army's acquisition system. Matrix management of the PM mission is at the nucleus of a PM's realm of authority and responsibility. With the degree of success that this concept has

enjoyed in only two short years, the Army can look forward to accomplishing its goal toward improved acquisition procedures.

ENDNOTES

1. U.S. Army War College, Army Command and Management: Theory and Practice, Carlisle Barracks, Pennsylvania, 18 August 1989, p. 17-1.

2. J. Ronald Fox, The Defense Management Challenge, Boston, Harvard Business School Press, 1988, p. 41.

3. Edward Hirsch and Fred Waelchi, "Toward a Set of Guiding Principles for Defense Acquisition Management," Defense 89, March-April 1989, p. 7.

4. Army Command and Management: Theory and Practice, p. 17-13.

5. United States General Accounting Office, Acquisition Reform: DOD's Efforts To Streamline Its Acquisition System and Reduce Personnel, Report to the Honorable William V. Roth, Jr., GAO/NSIAD-90-21, Washington, November 1989, p. 11.

6. Fox, p. 154.

7. Connie Fairchild Peterson, GS-12, Project Effectiveness and the Balance of Power in Matrix Organizations: An Exploratory Study, Thesis. Wright-Patterrson Air Force Base: Air Force Institute of Technology, 1 December 1986, p. 6.

8. U.S. Department of the Army, Army Regulation 70-17, Program, Project, and Product Management, Washington, 18 September 1989, p. 2-2.

9. Brigadier General Edward Hirsch, USA (ret.), "DOD's Move To a More Professional Acquisition Work Force," Program Manager, May-June 1988, p. 3.

10. Robert. O. Black, "Army Streamlined Acquisition Program," National Defense, Vol. LXXII, No. 437, April 1988, p. 28.

11. AR 70-17, p. 2-2.

12. T.J. Peters and R.H. Waterman, In Search of Excellence, New York, Harper and Row, 1982, p. 2.

13. Gareth Morgan, Images of Organization, London, Sage Publications, 1986, p. 61.

14. Ibid., p. 61.

15. Ibid., p. 57.

16. Joe M. Banks, Major, Organizational Assessment of a Matrix Organization: A Preliminary Investigation Into the Two Boss System Within System Program Offices, Maxwell AFB, AL: Air Command and Staff College, 5 August 1982, p. v.

17. Consensus, Personal Letters From Selected Program Officers and Program Executive Officers in the Major Commodity Commands of the Army Materiel Command.

18. Ibid.

19. Louis C. Wagner, Jr., General, "AMC: The Army's Logistician," Army Logistician, May-June 1988, p. 7.

20. Consensus.

21. Dr. Andrew P. Mosier, "Past Acquisition Improvements: Not Sufficient," Program Manager, May-June 1988, p. 43.

22. GAO Report, p. 3.

23. Banks, p. v.

25. Mosier, Andrew. "DOD Actions to Increase Acquisition Productivity," Program Manager, Vol. 18, May-June 1989, pp. 60-72.

26. Pigaty, Leo J., MG, USA. "12 Ways To Good Contracting," Army Logistician, Nov-Dec 1988, pp. 8-11.

27. Ritter, LTC. "Removing Barriers To Productivity," TIG Brief, Vol. 40, March-April 1989, pp. 5-6.

28. Schemmer, Benjamin F. and Levens, Luanne K. "An Interview With Dr. Robert B. Costello," Armed Forces Journal, Vol. 125, June 1988, p. 54.

29. Wagner, Louis C., General, USA. "Tomorrow's Edge On Technology," Army, Vol. 38, October 1988, pp. 100-103.

30. Wagner, Louis C., General, USA. "AMC, The Army's Logistician," Army Logistician, May-June 1988, pp. 2-7.

LETTERS

31. Letters To the Author, from selected Program Managers and Program Executive Officers at the U.S. Army Missle Command, Huntsville, AL; U.S. Army Tank-Automotive Command, Warren,MI; U.S. Army Communications-Electronics Command, Ft. Monmouth, NJ.